

**April 2007**  
**FACT SHEET**  
**NTUA - Shiprock**  
**NPDES Permit No. NN0020621**

*(Note: Effective December 2005, the National Pollutant Discharge Elimination System (NPDES) permit number for this facility had been changed from NM0020621 to NN0020621. The two-letter prefix of the permit number is being replaced with NN for its state code to provide for more efficient data management. The new NN prefix will be used in the EPA's database for all NPDES permits in the Navajo Nation.)*

**I.     Introduction**

The Navajo Tribal Utility Authority (NTUA) was issued an NPDES Permit (NM0020621) on January 21, 2001 for the NTUA Shiprock wastewater treatment lagoon facility. The permit became effective January 21, 2001 and would expire at midnight January 21, 2006. The NTUA reapplied for reissuance on October 11, 2005.

<u>Applicant Address:</u>	Navajo Tribal Utility Authority P.O. Box 170 Fort Defiance, AZ 86504
<u>Applicant Contact:</u>	Harry L. Begaye, Technical Assistant (928) 729-5721
<u>Facility Address:</u>	Navajo Tribal Utility Authority Shiprock Wastewater Treatment Plant P.O. Box 1749 Shiprock, NM 87420-1749
<u>Facility Contact:</u>	Eugene D. John, District Manager (505) 368-4639

**II.    Background**

The NTUA Shiprock wastewater treatment plant is located in Shiprock, approximately 2 miles northwest of Highway 491 and ½ mile north of Highway 64 in San Juan County, New Mexico, within the Northeastern portion of the Navajo Nation at latitude 36° 47' 15.5" North and longitude 108° 42' 44.1" West (Township 30N, Range 18W, Section 25).

Based on information provided in the October 2005 permit renewal application, the facility serves a population of approximately 10,000, receiving only domestic sewage with a design flow of 1.0 million gallons per day (MGD). The average daily flow rates were 0.58 MGD in 2003, 0.60 MGD in 2004 and 0.64 MGD in 2005. The maximum daily flow rates were 0.99 MGD, 1.2 MGD and 0.97 MGD for 2003, 2004 and 2005, respectively. The design flow capacity basis of 1.0 MGD was used in determining the permit limits in the previous permit and is being used in the proposed permit.

Pretreatment at the entrance works includes a bar screen/comminutor, a grit chamber and two trickling filters with a center column and distribution arms. The facility includes primary clarification, trickling filter, secondary sedimentation, and disinfection. An anaerobic digester with a flowing cover, mixing unit, heating system is currently coding the digester. Ultraviolet (UV) disinfection is accomplished with UV lamps that produce radiation to destroy bacteria, viruses and other microorganisms within the wastewater. In the event that the UV disinfection system is under repair, chlorination along with dechlorination would be employed as a backup disinfection system. Any sampling and monitoring under the proposed permit shall be performed at Outfall No. 001.

The Endangered Species Act (ESA) requires federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) if their actions could beneficially or adversely affect any threatened or endangered (T or E) species. While EPA believes that effluent released in compliance with this permit will have no effect on any federally-listed T or E species or its critical habitat that may be present in the area and is proposing to issue the permit (renewal), EPA may decide that changes to the permit may be warranted based on receipt of new information. The treatment facility has been in existence for some time, and no new construction or modifications will be made to it due to the proposed NPDES permit. No requirements specific to the protection of endangered species are proposed in the permit. A copy of the permit and fact sheet is being sent to the USFWS and NHP for review during the public comment period.

### **III. Basis of Proposed Permit Requirements**

The proposed discharge limitations are based on:

- A. Secondary Treatment Regulations contained in 40 CFR Part 133, Sections 133.101 through 133.105, promulgated September 20, 1984, and most recently amended on January 27, 1989. EPA used these regulations and its BPJ to develop limits for this facility.
- B. Approved 1999 Navajo Nation Surface Water Quality Standards ("NNSWQS"); 2004 NNSWQS revisions, promulgated on July 30, 2004.

### **IV. Navajo Nation Water Quality Standards**

The Navajo Nation has received Treatment as a State ("TAS") for Sections 106 and 303 of the Clean Water Act ("CWA"). In January 2006, the Navajo Nation received TAS to administer the water quality standards and certification programs under Sections 303 and 401 of the CWA.

CWA Section 106 grant money was used to develop water quality standards and use designations, which must be approved under Section 303 by EPA Region 9. In March 2006, EPA approved the 1999 NNSWQS that were promulgated on November 9, 1999 and submitted along with the TAS application under CWA Section 303. A revision to the NNSWQS was approved by the Navajo Nation Council on July 30, 2004. The approved 1999 Navajo Nation water quality standards and 2004 revisions will be used on a best professional judgment ("BPJ") basis for purposes of developing water quality based effluent limitations.

## V. Designated Uses of the Receiving Water

The designated uses of the receiving water (San Juan River in Segment 2401 of the San Juan River Basin), as defined by the 2004 NNSWQS are domestic water supply, primary human contact, and secondary human contact, agricultural water supply, fish consumption, aquatic habitat, and livestock and wildlife watering (Table 204.1, page 21.)

## VI. Determination of Effluent Limitations, Monitoring, and Reporting Requirements

### A. Flow Rates

Under the proposed permit, there are no flow limits but the flow must be monitored and reported. The monitoring frequency is once per month, same as the previous permit.

### B. Five-Day Biochemical Oxygen Demand (BOD<sub>5</sub>)

Under the proposed permit, the discharge shall not exceed a weekly average of 45 mg/l and monthly average of 30 mg/l BOD<sub>5</sub>, and shall achieve no less than a monthly average rate of 85% removal. These limits are required under 40 CFR Section 133.102(a).

Under 40 CFR Section 122.45(f), mass limits are required for BOD<sub>5</sub>. Based upon the design flow of 1.0 MGD, the mass limits for BOD<sub>5</sub> are based on the following calculations:

#### Monthly Average

$$\frac{1.0 \text{ MG}}{\text{day}} \times \frac{30 \text{ mg}}{\text{l}} \times \frac{8.345 \text{ lb/MG}}{1 \text{ mg/l}} \times \frac{0.4536 \text{ kg}}{\text{lb}} = 114 \text{ kg/day}$$

#### Weekly average

$$\frac{1.0 \text{ MG}}{\text{day}} \times \frac{45 \text{ mg}}{\text{l}} \times \frac{8.345 \text{ lb/MG}}{1 \text{ mg/l}} \times \frac{0.4536 \text{ kg}}{\text{lb}} = 170 \text{ kg/day}$$

#### Daily Maximum

$$\frac{1.0 \text{ MG}}{\text{day}} \times \frac{90 \text{ mg}}{\text{l}} \times \frac{8.345 \text{ lb/MG}}{1 \text{ mg/l}} \times \frac{0.4536 \text{ kg}}{\text{lb}} = 341 \text{ kg/day}$$

The monitoring frequency is three/month which is the same as the previous permit. The monthly and weekly limits are consistent with those in the previous permit. A new daily maximum mass limit for BOD<sub>5</sub> had been added to the permit, given that actual, historical flow rates had exceeded the plant's maximum design capacity of 1.0 MGD.

C. Total Suspended Solids (TSS)

Under the proposed permit, the discharge shall not exceed a weekly average of 45 mg/l and a monthly average of 30 mg/l TSS, and shall achieve no less than a monthly average rate of 85% removal. These limitations (Alternative State Requirements) are consistent with 40 CFR Sections 133.101(f), 133.102(b) and 133.103(c). Mass limit requirements in accordance with 40 CFR 122.45(f) have also been set in the proposed permit. Mass limits are based upon the same calculation shown above for BOD<sub>5</sub>. The weekly average is 170 kg/day and the monthly average is 114 kg/day. The daily maximum limit is 341 kg/day. The monitoring frequency is three per month. The monthly and weekly limits are consistent with those in the previous permit. A new daily maximum mass limit for TSS had been added to the permit, given that actual, historical flow rates had exceeded the plant's maximum design capacity of 1.0 MGD

D. Determination of Effluent Limitation for *Escherichia coli* (*E. coli*)

In the proposed permit, the monthly geometric mean of *E. coli* bacteria shall not exceed 126/100 ml and 235/100 ml as a single sample maximum. These limits are based on the NNSWQS for domestic water supply and primary human contact protection (p. 26). The previous permit utilized fecal coliform bacteria (FCB) values but the amended NNSWQS replaced FCB with *E. coli*. The monitoring frequency is three/month.

E. Total Residual Chlorine (TRC)

If chlorination is used, the discharge shall not exceed 5 µg/l as a monthly average limit and 11.0 µg/l as a single sample maximum, based on the NNSWQS for acute and chronic aquatic habitat, livestock and wildlife protection (p. 30). The monthly average limit is an addition whereas the maximum limit is identical to that in the previous permit. This requirement is consistent with the Navajo Nation Water Quality Standards (p. 30). The monitoring frequency is three/month.

F. Total Ammonia Nitrogen (NH<sub>3</sub>-N)

The proposed permit establishes a monitoring and reporting requirement for total ammonia nitrogen, which includes the ammonium ion (NH<sub>4</sub><sup>+</sup>) and free ammonia (NH<sub>3</sub>). This requirement replaces that of ammonia in the previous permit. The monitoring frequency is once per month. If analytical results for the first four quarters reveal ammonia levels are below EPA's National Water Quality Criteria for ammonia, the monitoring frequency will decrease to once per year. The regulations at 40 CFR Part 122.44(i) allow requirements for monitoring as determined to be necessary. The criteria for ammonia are pH and temperature dependent.

G. Total Dissolved Solids (TDS)

The regulations at 40 CFR 122.44(i) allow requirements for monitoring as determined to be necessary. The monitoring frequency is once/month.

H. pH

The proposed permit requires that effluent pH not fall below 6.6 or above 8.8 standard pH units, identical to those in the previous permit. The monitoring frequency is three/month.

I. Temperature

The proposed permit establishes a monitoring requirement for temperature, to be taken concurrently with measurements for pH and total ammonia nitrogen, as ammonia toxicity is pH and temperature dependent. The monitoring frequency is once/month.

J. Priority Pollutant Scan

The proposed permit establishes a monitoring requirement for the full list of priority pollutants as listed in the Code of Federal Regulations (CFR) at 40 CFR Part 423, Appendix A. No limit is set at this time. Should the results of the first test reveal levels below EPA's National Water Quality Criteria for priority pollutants, monitoring will no longer be required of the permittee.

**VII. Reporting**

The proposed permit requires discharge data obtained during the previous three months to be summarized on monthly DMR forms and reported quarterly. If there is no discharge for the month, report "C" in the No Discharge box on the DMR form for that month. These reports are due January 28, April 28, July 28, and October 28 of each year. Duplicate signed copies of these, and all other reports required herein, shall be submitted to the EPA Regional Administrator and the Navajo Nation EPA.

**VIII. General Standards**

The proposed permit sets general standards that are narrative water quality standards contained in the Navajo Nation Water Quality Standards, Section 203. These general standards are set forth in Section B. General Discharge Specifications of the permit.

**IX. Permit Reopener**

At this time, there is no reasonable potential to establish any other water quality-based limits. Should any monitoring indicate that the discharge causes, has the reasonable potential to cause, or contributes to excursion above a water quality criteria, the permit may be reopened for the imposition of water quality-based limits and/or whole effluent toxicity limits. The proposed permit

may be modified, in accordance with the requirements set forth at 40 CFR 122.44 and 124.14, to include appropriate conditions or limits to address demonstrated effluent toxicity based on newly available information, or to implement any EPA-approved new Tribal water quality standards.

## **X. Biosolids Requirements**

The permittee shall submit a report 60 days prior to disposal of biosolids. The report shall discuss the quantity of biosolids produced, the treatment applied to biosolids including process parameters, disposal methods, and, if land applied, analyses for Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Molybdenum, Nickel, Zinc, and Selenium, and organic-N, ammonium-N, and nitrate-N, all expressed in mg/kg biosolids on a 100% dry weight basis. The permittee shall comply with all standards for biosolids use and disposal at Section 405(d) of the CWA, and 40 CFR Parts 257, 258 and 503.

## **XI. Threatened and Endangered Species and Critical Habitat**

### **A. Background:**

Section 7 of the Endangered Species Act (ESA) of 1973 requires Federal agencies such as EPA to ensure, in consultation with the U.S. Fish and Wildlife Service (FWS), that any actions authorized, funded or carried out by the Agency are not likely to jeopardize the continued existence of any Federally- listed endangered or threatened species or adversely modify or destroy critical habitat of such species.

Since the issuance of NPDES permits by EPA is a Federal action, consideration of a permitted discharge and its effect on any listed species is appropriate. The proposed NPDES permit authorizes the discharge of municipal waste into the San Juan River, a water of the United States. The proposed permit contains provisions for monitoring conventional, toxic chemicals, and nonconventional pollutants in compliance with the federal regulations for secondary treatment and the Navajo Nation Surface Water Quality standards, to ensure an appropriate level of quality of water discharged by the facility. A re-opener clause has been included should new information become available to indicate that the requirements of the permit need to be changed.

EPA has received updated species listing information from the Navajo Nation's Department of Fish & Wildlife – Natural Heritage Program (NHP) in December 2005. The FWS has deferred all of its survey and information collection in the Navajo Nation to the Navajo Nation NHP.

On December 30, 2006, the Navajo Nation NHP had identified seven (7) listed, proposed or candidate T or E species that may potentially occur in the project boundaries. The listed species are listed as follows:

Names (common and scientific)	Status
Mountain Plover ( <i>Charadrius montanus</i> )	Proposed T
Southwestern willow flycatcher ( <i>Empidonax traillii extimus</i> )	E
Bald Eagle ( <i>Haliaeetus leucocephalus</i> )	T
Black-footed ferret ( <i>Mustela nigripes</i> )	E
Colorado pikeminnow ( <i>Ptychocheilus lucius</i> )	T
Razorback sucker ( <i>Xyrauchen texanus</i> )	E
Mesa Verde cactus ( <i>Sclerocactus mesae-verdae</i> )	T

The NHP had also identified six (6) Navajo endangered species as follows:

Names (common and scientific)
Pronghorn ( <i>Antilocapra americana</i> )
Golden Eagle ( <i>Aquila chrysaetos</i> )
Bluehead sucker ( <i>Catostomus discobolus</i> )
Mottled Sculpin ( <i>Cottus bairdi</i> )
Peregrine Falcon ( <i>Falco peregrinus</i> )
Roundtail chub ( <i>Gila robusta</i> )

**B. EPA's Finding:**

This permit authorizes the discharge of treated wastewater in conformance with the federal secondary treatment regulations and the Navajo Nation Surface Water Quality Standards. These standards are applied in the permit both as numeric and narrative limits. Therefore, since the standards themselves are designed to protect aquatic species, including threatened and endangered species, any discharge in compliance with these standards should not adversely impact any threatened and endangered species.

EPA believes that effluent released in compliance with this permit will have no effect on any federally-listed threatened or endangered species or its critical habitat that may be present in the area. The treatment facility has been in existence for some time, and no new construction or modifications will be made to it due to the proposed NPDES permit. EPA is proposing to issue the permit (renewal) with requirements for restrictions on chlorine levels that are associated with the concern for endangered species in the San Juan River, as the previous permit. EPA may decide that changes to the permit may be warranted based on receipt of new information.

EPA is requesting comments from the NHP and the USFWS as well as the public and will consider their comments in making the final permit decision. EPA will initiate consultation should new information reveal impacts not previously considered, should the activities be modified in a manner beyond the scope of the

original opinion of the FWS, or should the activities affect a newly-listed species. A re-opener clause has been included should new information become available to indicate that the requirements of the permit need to be changed.

## **XII. Information and Copying**

The Administrative Record, which contains the draft NPDES permit, the fact sheet, comments received, and other relevant documents, is available for review and may be obtained by calling or writing to the above address.

All comments or objections received within thirty (30) days from the date of the public notice, will be retained and considered in the formulation of the final determination regarding the permit issuance.

## **XIII. Administrative Information -- Public Notice, Public Comments, and Requests for Public Hearings**

In accordance with 40 CFR 124.10, public notice shall be given by the U.S. EPA Director that a draft NPDES permit has been prepared by mailing a copy of the notice to the permit applicant and other Federal and State agencies, and through publication of a notice in a daily or weekly newspaper within the area affected by the facility. The public notice shall allow at least 30 days for public comment on the draft permit.

In accordance with 40 CFR 124.11 and 12, during the public comment period, any interested person may submit written comments on the draft permit, and may request a public hearing if no hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. In accordance with 40 CFR 124.13, all persons must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position within thirty (30) days from the date of the public notice. Comments may be received either in person or mailed to:

U.S. Environmental Protection Agency, Region IX  
CWA Standards and Permits Office (WTR-5)  
Attn: Linh Tran  
75 Hawthorne Street  
San Francisco, CA 94105  
Telephone: (415) 972-3511

Interested persons may obtain further information, including copies of the draft permit, fact sheet/statement of basis, and the permit application, by contacting Linh Tran (WTR-5) at the U.S. EPA address, above. Copies of the administrative record (other than those which U.S. EPA maintains as confidential) are available for public inspection between 8:00 a.m. and 4:30 p.m., Monday through Friday (excluding federal holidays).

In accordance with 40 CFR 124.12, the U.S. EPA Director shall hold a public hearing when she finds, on the basis of requests, a significant degree of public interest in the draft permit. The



Director may also hold a public hearing when, for instance, such a hearing might clarify one or more issues involved in the permit decision. Public notice of such hearing shall be given as specified in 40 CFR 124.10.